



BROWN
Alpert Medical School

**Clinical Psychology Training Programs at Brown: A Consortium of the
Providence VA Medical Center, Lifespan, and Care New England
Postdoctoral Fellowship Training Program
Postdoctoral Fellowship Description: RESEARCH FOCUS**

Title: Center for Neurorestoration and Neurotechnology: Postdoctoral Fellowship in
Neuroimaging and Neuromodulation

APA-accredited: ___ Yes __X__ No

Site: Providence VA Medical Center

Supervisor(s): Noah S. Philip, MD, Primary Supervisor
Jennifer Barredo, PhD
Benjamin D. Greenberg MD, PhD
Tracie M Shea, PhD

Description of Site:

The Center for Neurorestoration and Neurotechnology (CfNN): The CfNN is directed by Dr. Leigh Hochberg MD PhD and Ben Greenberg MD PhD and provides an outstanding environment in terms of both physical resources and intellectual collaboration. The CfNN is located at the Providence VA Medical Center and affiliated with the Alpert Medical School of Brown University. The CfNN is composed of several Focus Areas (representing restoration goals related to neuroprosthetics, mental health and cognitive disorders, and functional outcome recovery). This postdoctoral position would be associated with Focus Area 2 (FA2); FA2 has several faculty members, all with their own independent or interdisciplinary research and funding, and all using neuroimaging and brain stimulation across a variety of indications and disorders. Additional staff include research assistants, IRB coordinators, administrative assistants and other ancillary staff. Dr. Philip and colleagues at the CfNN are currently conducting several VA, DoD, NIH and state-funded investigations related to mechanisms of action of non-invasive brain stimulation, and use neuroimaging to characterize predictors of response and mechanisms underlying changes. The broader CfNN environment includes a large number of faculty members with related expertise who add tremendously to the overall scientific environment.

The CfNN is affiliated with the Department of Psychiatry and Human Behavior (DPHB) in the Alpert Medical School of Brown University. Within the Brown Medical School, the DPHB participates in joint research and clinical training programs with other Medical School departments, including Family Medicine, Neurology, Neurosurgery, Medicine, and Pediatrics, as well as the campus-based Departments of Public Health, Neuroscience, Psychology, Pharmacology and Biotechnology. Numerous forums provide networking opportunities, including Grand Rounds, research day, journal clubs, research seminars, grant writing workshops, special interest groups, and visiting professor luncheons. One of the greatest strengths of the Department is the collaborative work fostered across disciplines, as well as between clinicians and researchers. Research activities conducted by DPHB faculty include close to 200 ongoing studies funded by more than 50 external sources such as the National Institute of Mental Health (NIMH), National Cancer Institute (NCI), Veterans Affairs (VA), Department of Defense (DoD), National Institute of Child Health and Human Development (NICHD), National Institute on Drug Abuse (NIDA), National Institute of Alcohol Abuse and Alcoholism (NIAAA), the National Center for Complementary and Integrative Health (NCCIH) and the National Alliance for Research on Schizophrenia and Depression (NARSAD).

Fellowship Aims

1. To provide the fellow with broad post-doctoral research training related to the use of neuroimaging to understand predictors of clinical response to non-invasive brain stimulation, and characterization of brain changes underlying clinical improvements from brain stimulation (i.e., therapeutic mechanisms of action).
2. To provide the fellow with a strong working knowledge of clinical trial methodologies that integrate neuroimaging and neuromodulation.
3. To provide the fellow with strong working knowledge of evidence-based assessment of psychiatric disorders and related illnesses, with a focus on posttraumatic stress disorder and suicidality.
4. To actively participate in research, including grant writing, data collection, management and analysis, and development and implementation of research protocols, with the goal of presenting research results at national meetings and writing peer-reviewed manuscripts.

Fellowship Timeline

This is a two-year fellowship, renewable after one-year contingent upon satisfactory progress. The anticipated start date is July 2021.

Research Activity Plan (90%)

The fellowship is primarily a research position. The fellow will be exposed to various aspects of research in the area of neuroimaging and neuromodulation via participation in ongoing investigations and data analyses. The fellow will participate in the following activities.

- Database analysis: The fellow will serve as project leader on the imaging analyses related to functional and structural connectivity data related to non-invasive brain stimulation. Responsibilities will include quality control review of existing data, performance of preprocessing and data analyses. The fellow may also serve as leader on other projects related to neuroimaging mechanisms of brain stimulation, with related responsibilities regarding data flow and analyses. The fellow will participate in weekly research meetings focused on research progress, discussion of relevant literature, and ongoing program planning. **(50% time)**
- Review of the literature on neuromodulation in clinical populations: The fellow will be provided with a series of focused readings to increase their knowledge of this area. **(5% time)**
- Review of brain stimulation techniques, including transcranial direct current and magnetic stimulation (tDCS, TMS), respectively. The fellow will be provided with an opportunity for hands-on learning about how to administer non-invasive brain stimulation under physician supervision **(5% time)**
- Grant writing: The fellow will have the opportunity to contribute toward outgoing grant preparation/submissions. The fellow will also be encouraged to develop their own grant idea and submit a grant proposal by the end of the fellowship term. **(15% time)**
- Manuscript preparation and submission: The fellow will be encouraged to collaborate on manuscript preparation and poster submissions at national conferences. A number of datasets

are currently available that will facilitate manuscript preparation. Individually tailored goals will be established in this area **(15% time)**

Clinical Activity Plan

This position is not explicitly designed to support a path toward licensure. However, opportunities for clinical experience will be considered based on availability and goals of the postdoctoral fellow. Should clinical activities be added, they would be in areas that complement fellowship content area – i.e. treatment of Veterans with PTSD – and would not exceed 12.5-15% time over two years (i.e., 4-6 hours per week based on a 40-hour week). In this circumstance, the clinical effort would be subtracted from responsibilities outlined as part of the Research Activity Plan.

Path toward licensure: YES ___ NO X__

Didactics (10%)

Postdoctoral Seminars: The fellow will participate in the following postdoctoral seminars through the Brown Postdoctoral Training Program.

Mandatory Didactics:

Core Seminars (1 per month)

DPHB Academic Grand Rounds (1 per month)

Clinical Ethics – if intending to sit for licensure (1 per month)

DPHB T32 Core Seminars (weekly on Fridays)

Supervision and Evaluation

The fellow will have weekly individual meetings with Dr. Philip and/or Dr. Barredo. Research mentoring is also readily available from Drs. Shea and Greenberg; also from CfNN faculty such as Mascha van 't Wout-frank. The fellow will also participate in regularly scheduled study progress meetings and related CfNN bi-weekly and monthly meetings. If required, Drs. Shea or an appropriate designee (with the designee determined by Drs. Shea and Philip) will provide clinical supervision as indicated.

Every 6 months for the duration of the fellowship, the fellow and the supervisors will provide formal evaluations, and evaluations of the program relative to the goals and learning objectives of the fellowship.

Resource Requirements

Fellow will be provided with the following resources:

- Access to space to complete research responsibilities
- A computer and project specific software
- Internet access
- Telephone

Reporting and approval

This fellowship will be part of the RFP, and hiring will be contingent upon standard requirements at the Providence VA Medical Center.

Associate Director, Research Fellowship Program (RFP)

Director, Postdoctoral Fellowship Training Program PFTP)